



#3
284B4
1-23-0
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: CHRISTOPHER DAVID PRICE
For: STATUS ENQUIRY IN A WIRELESS COMMUNICATION SYSTEM
Serial No.: 10/064,992 Examiner:
Filed: September 6, 2002 Group Art Unit: 2643
Docket No.: 71522-1

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

☒ deposited with the United States Postal Service
with sufficient postage as first class mail, in an envelope
addressed to the Commissioner for Patents,
Washington, DC 20231

☐ transmitted by facsimile to the Patent and Trademark Office.
to Examiner _____ at _____

Signature

Date: January 10, 2003

Andrea R. Wolters
(type or print name of person certifying)

Commissioner for Patents
Washington, D.C. 20231

RECEIVED

Sir:

TRANSMITTAL OF PRIORITY DOCUMENT

JAN 17 2003

Technology Center 2600

Applicant submits herewith a certified copy of the priority document (United Kingdom Application No. 0121639.9) relied upon by Applicant in the captioned application, pursuant to 37 C.F.R. § 1.55(a)(2).

Please direct any questions relating to this matter to the undersigned attorney for Applicant.

Respectfully submitted,

Christopher David Price

Date: 10 January 2003

By: 

Joel E. Bair, Reg. No. 33,356
McGARRY BAIR PC
171 Monroe Avenue, NW, Suite 600
Grand Rapids, Michigan 49503
616-742-3500

G0077350

This Page Blank (uspto,



INVESTOR IN PEOPLE



The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

RECEIVED

JAN 17 2003

Technology Center 2600

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation and Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein together with the Statement of inventorship and of right to grant of a Patent (Form 7/77), which was subsequently filed.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

Signed

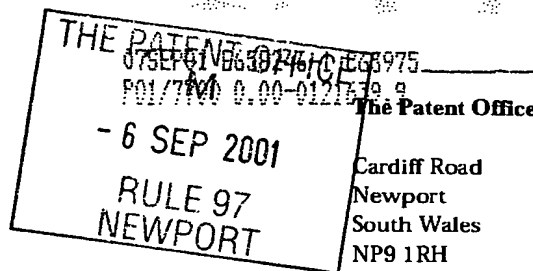
Dated 4 October 2002

CERTIFIED COPY OF
PRIORITY DOCUMENT

This Page Blank (uspto)

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



1. Your reference **01.0088-Sen/P026/GB/AJW**

0121639.9

6 SEP 2001

3. Full name, address and postcode of the or of each applicant (*underline all surnames*)
Sendo International Limited
1601-3 Kinwick Center
32 Hollywood Road, Central, Hong Kong

Patents ADP number (*If you know it*)

If the applicant is a corporate body, give the country/state of its incorporation **Hong Kong**

8026064001

4. Title of the invention **Status Enquiry in a Wireless Communication System**

5. Name of your agent (*If you have one*)

Tony Wray

"Address for service" in the United Kingdom to which all correspondence should be sent (*including the postcode*)

InetIP
121 Blackberry Lane
Four Marks, Alton
Hampshire GU34 5DJ

OPTIMUS
Grove House,
Lutyns Close,
Chineham Court,
BASINGSTOKE,
RG24 8AG
M. JONES
GROF

Patents ADP number (*If you know it*)

8187155001 **08406894001**

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (<i>If you know it</i>) the or each application number	Country	Priority application number (<i>If you know it</i>)	Date of filing (<i>day / month / year</i>)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (<i>day / month / year</i>)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (*Answer 'Yes' if:*) **Yes**

- a) any applicant named in part 3 is not an inventor, or
 - b) there is an inventor who is not named as an applicant, or
 - c) any named applicant is a corporate body.
- See note (d))

Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

Description

17

Claim(s)

6

Abstract

1

Drawing(s)

2 + 2

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

2

Request for preliminary examination and search (Patents Form 9/77)

1

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11.

I/We request the grant of a patent on the basis of this application.

Signature

Date

Antony Wray

05 September 2001

12. Name and daytime telephone number of person to contact in the United Kingdom

Antony Wray

01256 816233

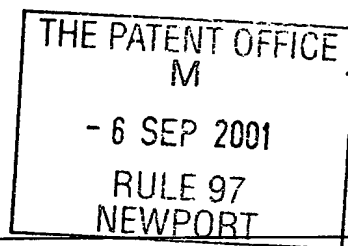
Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s). Any continuation sheet should be attached to this form.
- If you have answered 'Yes' Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

**Statement of inventorship and of
right to grant of a patent**



The Patent Office
Cardiff Road
Newport
South Wales
NP9 1RH

1. Your reference	01.0088-Sen/P026/GB/AJW	
2. Patent (if you)	0121639.9	6 SEP 2001
3. Full name of the or of each applicant	Sendo International Limited 1601-3 Kinwick Center 32 Hollywood Road, Central, Hong Kong	
4. Title of the invention	Status Enquiry In A Wireless Communication System	
5. State how the applicant(s) derived the right from the inventor(s) to be granted a patent	The applicant derives the right to be granted a patent by virtue of the inventor's employment agreement with Sendo Ltd. in Small Heath Business Park, Birmingham, England - a sister company of the applicant - in conjunction with a written agreement transferring all IP rights from Sendo Ltd. to the applicant. Sendo International Ltd.	
6. How many, if any, additional Patents Forms 7/77 are attached to this form? (see note (c))		
7.	I/We believe that the person(s) named over the page (and on any extra copies of this form) is/are the inventor(s) of the invention which the above patent application relates to. Signature <u>Antony Wray</u> Date 05 September 2001	
8. Name and daytime telephone number of person to contact in the United Kingdom	Antony Wray	01256 816233

Notes

- a) If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- b) Write your answers in capital letters using black ink or you may type them.
- c) If there are more than three inventors, please write the names and addresses of the other inventors on the back of another Patents Form 7/77 and attach it to this form.
- d) When an application does not declare any priority, or declares priority from an earlier UK application, you must provide enough copies of this form so that the Patent Office can send one to each inventor who is not an applicant.
- e) Once you have filled in the form you must remember to sign and date it.

Enter the full names, addresses and postcodes of the inventors in the boxes and underline the surnames

Christopher David PRICE
22 Banquo Approach,
Heathcote,
Warwick,
CV34 6GB

8220717001 *NY*

Patents ADP number *(if you know it):*

Patents ADP number *(if you know it):*

Reminder

Have you signed the form?

Patents ADP number *(if you know it):*

STATUS ENQUIRY IN A WIRELESS COMMUNICATION SYSTEM

Field of the Invention

5

This invention relates to a method of ascertaining the status of a subscriber communication unit in a wireless communication system. The invention is applicable to, but not limited to, a method of ascertaining the status
10 of one mobile server by another mobile server.

Background of the Invention

15 Wireless communication systems, for example cellular telephony or private mobile radio communication systems, typically provide for radio telecommunication links to be arranged between a plurality of base transceiver stations (BTSs) and a plurality of subscriber units.

20

In a wireless communication system, each BTS has associated with it a particular geographical coverage area (or cell). The coverage area is defined by a particular range where the BTS can maintain acceptable
25 communications with mobile stations operating within its serving cell. Often these cells combine to produce an extensive coverage area.

Wireless communication systems are distinguished over
30 fixed communication systems, such as the public switched telephone network (PSTN), principally in that mobile

stations move between coverage areas served by different BTS (and/or different service providers) and, in doing so, encounter varying radio propagation environments.

- 5 In the field of wireless communications, it is known for portable or mobile communication units to operate as mobile servers. In the context of the present invention, the term "mobile server" is used to refer to the combination of a 'subscriber communication unit' and a
- 10 subscriber identity module (SIM) or at least an element that is capable of replicating the functions of a SIM. The subscriber communication unit in this context is the radio frequency (RF) transceiver hardware of a wireless communication unit that is used by the SIM to communicate
- 15 to other communication units. The subscriber communication unit is physically capable of RF communication with a network, but without the SIM will be refused access to the network.
- 20 One problem with MSs is that it is possible for them to travel outside of a mobile cellular communication network, or that a MS can be switched off, thereby becoming uncontactable by other communication units in the communication system, either wireless portable/mobile
- 25 products or other elements in the infrastructure, such as the serving BTS (or Node B).

One simple way of ascertaining whether or not a MS is contactable is to make a call to the MS. However, this

30 is not always desirable. An example would be if a user's MS wishes to send a short message service (SMS) text

message to another MS. If the user's MS is not configured for delivery reports to be returned, once the SMS message has been received, the user will not know whether the MS to which they are sending the SMS text message is contactable, and therefore whether the text message has been received.

Not all users of mobile servers desire delivery reports to be returned for each SMS text message they send. Therefore, on the occasions that they wish to have confirmation that the destination MS was contactable and received the SMS message, it is necessary for them to configure the MS to receive a delivery report for that particular SMS message. After receiving the delivery report, it is then necessary for the MS to reconfigure itself so that such delivery reports are no longer requested.

Furthermore, some network operators do not permit delivery reports to be returned, if they are unable to charge for the delivery reports. This is particularly the case if the network operator has to bear the transmittal costs of the delivery reports. Under such circumstances, the user cannot easily determine whether the destination MS is contactable and whether it received the SMS message.

The inventor of the present invention has recognised another situation where a user of a first MS might be interested in ascertaining an operational and/or contactability status of another MS. Such a situation would

occur when the destination MS is contactable but the user of the destination MS does not respond or answer when a call is made. The inventor of the present invention has recognised the benefit for an MS user to have a means of
5 informing another MS user who is trying to contact them that they are presently unavailable. In this way, the user attempting to make contact would not feel the necessity to repeatedly attempt to make contact, but rather wait until the user they are attempting to contact
10 becomes available.

Thus, there exists a need in the field of the present invention to provide a means and method of providing a status enquiry wherein the abovementioned disadvantages
15 associated with prior art arrangements may be alleviated.

Statement of Invention

20 In accordance with a first aspect of the present invention, there is provided a method of status enquiry, as claimed in claim 1.

In accordance with a second aspect of the present
25 invention, there is provided a wireless communication system, as claimed in claim 13.

In accordance with a third aspect of the present invention, there is provided a wireless communication
30 unit, as claimed in claim 14.

In accordance with a fourth aspect of the present invention, there is provided a wireless communication unit, as claimed in claim 15.

- 5 In accordance with a fifth aspect of the present invention, there is provided a wireless communication unit, as claimed in claim 16.

- 10 In accordance with a sixth aspect of the present invention, there is provided a storage medium, as claimed in claim 21.

Brief Description of the Drawings

15

Exemplary embodiments of the present invention will now be described, with reference to the accompanying drawings, in which:

- 20 FIG. 1 shows a block diagram of a wireless communication unit such as a mobile server (MS) adapted to facilitate the use of status messages, in accordance with a preferred embodiment of the invention; and
- 25 FIG. 2 shows a flowchart illustrating a status enquiry and response process, in accordance with the preferred embodiment of the present invention.

30 Description of Preferred Embodiments

The present invention relates to a method of ascertaining the status of a mobile server (MS), for example a mobile cellular phone with a SIM. Referring now to FIG. 1, a block diagram of a wireless communication unit/mobile server (MS) is shown, in accordance with a preferred embodiment of the invention.

The MS 100 contains an antenna 102 preferably coupled to a duplex filter, circulator or antenna switch 104 that provides isolation between receive and transmit chains within the MS 100.

The receiver chain, as known in the art, includes scanning receiver front-end circuitry 106 (effectively providing reception, filtering and intermediate or base-band frequency conversion). The scanning front-end circuit is serially coupled to a signal processing function 108. An output from the signal processing function 108 is provided to a suitable output device 110, such as a screen or flat panel display.

The receiver chain also includes received signal strength indicator (RSSI) circuitry 112, which in turn is coupled to a controller 114 that maintains overall subscriber unit control. The controller 114 may therefore receive bit error rate (BER) or frame error rate (FER) data from recovered information. The controller 114 is also coupled to the scanning receiver front-end circuitry 106 and the signal processing function 108 (generally realised by a DSP).

The controller is also coupled to a memory device 116 that selectively stores operating regimes, such as decoding/encoding functions, synchronisation patterns, code sequences, RSSI data, direction of arrival of a
5 received signal and the like.

In accordance with the preferred embodiment of the invention, the memory device 116 stores status information relating to the MS's status enquiry
10 preferences and/or those of other MS. Furthermore, a timer 118 is operably coupled to the controller 114 to control the timing of operations (transmission or reception of time-dependent signals) within the MS 100, particularly with regard to transmitting and/or
15 responding to status enquiry messages, either automatically or in response to user input.

As regards the transmit chain, this essentially includes an input device 120, such as a keypad, coupled in series
20 through transmitter/modulation circuitry 122 and a power amplifier 124 to the antenna 102. The transmitter/modulation circuitry 122 and the power amplifier 124 are operationally responsive to the controller 114, and as such are used in transmitting the status enquiry
25 messages, and/or automatic responses, to other MS within the network.

The signal processor function 208 in the transmit chain may be implemented as distinct from the processor in the
30 receive chain. Alternatively, a single processor 108 may be used to implement processing of both transmit and

receive signals, as shown in FIG. 1. Clearly, the various components within the MS 100 can be realised in discrete or integrated component form, with an ultimate structure therefore being merely an arbitrary selection.

5

In accordance with the preferred embodiment of the present invention, scanning receiver front-end circuitry 106, together with, and under the control and guidance of, the signal processing function 108, memory device 116, timer function 118 and controller 114 have been adapted to receive and process status enquiry messages and/or associated status response messages.

Furthermore, in accordance with the preferred embodiment of the present invention, the transmitter/modulation circuitry 122, together with, and under the control and guidance of, the signal processing function 108, memory device 116, timer function 118 and controller 114 have been adapted to transmit and process status enquiry messages and/or associated status response messages.

20

In accordance with the preferred embodiment of the invention, the SIM may comprise a portion of, or the entire, memory device.

25

Preferably, the initiation of a status enquiry by an originating MS is effected in the simplest manner possible. For example, in order for the user of the originating MS to initiate the status enquiry, the user may access a phone book feature or call register feature stored in memory device 116, where the phone book feature

30

or call register feature relates to the user's MS/SIM. The user may then locate the name/number corresponding to the desired destination MS by scrolling up/down the phone book, and select from the names/numbers displayed on the
5 MS screen 110, as known in the art.

Furthermore, in the preferred embodiment of the present invention, a list of options are additionally provided in a menu accessible from the memory device 116 of the MS
10 100, under the control of controller 114 and/or processor function 108. The list of options includes a "Status" option. On selecting the "Status" option, the originating MS may transmit the status enquiry to a selected destination MS using, for example, the
15 aforementioned phone book feature or call register feature.

Alternatively, the MS may have a menu option specifically for ascertaining the statuses of other MSs. When this
20 option in the menu is selected, the user enters the number, or obtains the number from the phone book feature or call register feature of the MS from its memory device 116, in order to initiate the status enquiry.

25 It is within the contemplation of the invention that a further alternative method would be for the MS to include a dedicated button on, say, its keypad 120. The button, when pressed by the user, accesses the status enquiry feature of the MS. On entering the number of the
30 destination MS, or selecting the number from the phone

book feature or call register feature of the MS, the user can initiate the status enquiry.

5 Preferably, the status enquiry is transmitted in the form of a short message service (SMS) message, with the header of the SMS message identifying the message as being a status enquiry. However, it is within the contemplation of the invention that alternative message formats can be used.

10

It is also within the contemplation of the invention that the functionality of the controller 114 and/or processor 108 may be incorporated into, or distributed between, a number of elements, and need not be located solely in the
15 either the controller 114 or processor 108.

More generally, an algorithm to initiate status enquiry messages or responses thereto, according to the preferred embodiment of the present invention may be implemented in
20 a subscriber communication unit in any suitable manner. For example, new apparatus may be added to an existing subscriber communication unit, or alternatively existing parts of a conventional communication unit may be adapted, for example by reprogramming one or more
25 processors therein. As such, the required adaptation may be implemented in the form of processor-implementable instructions stored on a storage medium, such as a floppy disk, hard disk, PROM, RAM or any combination of these or other storage multimedia.

30

Referring now to FIG. 2, a flowchart 200 illustrates a status enquiry process in accordance with the preferred embodiment of the present invention.

- 5 In order for a user of a first, originating MS to ascertain the status of a second destination MS, the user of the originating MS initiates a status enquiry, as shown in step 210, for example using any of the techniques described with respect to FIG. 1. On
10 initiation of the status enquiry, the originating MS transmits a status enquiry to a mobile network, such as a GSM network, as in step 220.

The status enquiry is then transmitted across the mobile
15 network to the destination MS, as shown in step 230. Such a transmission may encompass a BTS (or Node B in UMTS parlance) receiving and forwarding the transmission directly to the destination MS, if the destination MS is also within its coverage area. Alternatively, such a
20 transmission may encompass the messages being passed from the originating MS's serving BTS to the destination MS's serving BTS via a BSC (or radio network controller (RNC) in UMTS parlance), if the destination MS is not within its coverage area.

- 25 On receipt of the status enquiry, the destination MS automatically transmits a response back to the originating MS, as in step 240. This response is transmitted across the mobile network to the originating
30 MS, as shown in step 250. On receipt of the response, the originating MS may display the operational and/or

contact-ability status of the destination MS to its user,
as shown in step 260.

In one embodiment of the present invention, on receipt of
5 the status enquiry, the destination MS automatically
transmits a response back to the originating MS. The
transmitted response informs the originating MS that the
message has been received. The destination MS may also
display a message to its user stating that a status
10 enquiry has been received.

It is envisaged that the user of the originating MS may
not wish the user of the destination MS to know that they
have automatically responded to the status enquiry. In
15 this case, the header of the status enquiry message may
include a flag that determines whether a presence of
status enquiry message is to be indicated to a
destination user, upon the destination user receiving a
status enquiry message.

20

It is within the contemplation of the invention that all
the aspects of the status enquiry procedure of the
preferred embodiments of the invention may be user-
configurable. One example would be for a user of the
25 destination MS to configure their MS such that it only
receives status enquiry calls at particular times of the
day, or particular days in the week. Furthermore, a
destination MS user may configure his/her MS in respect
of whether or not a message should be displayed that
30 informs the user that a status enquiry has been received.

The user of the destination MS may also provide information to be included in a response to a status enquiry. The response may therefore contain information such as: whether or not the user is available to accept
5 calls, whether only priority calls will be received, when they will start accepting calls, etc.

In a further embodiment of the present invention, on receipt of the status enquiry, the destination MS may
10 configure their MS to include status information in its response. For example, the status information may include whether the destination MS is set to play, for example, a ring tone on receiving a call, whether the MS is muted, or indeed any other form of set-up information.

15 If the destination MS is configured not to recognise status enquiry SMS messages, then the message is preferably treated like any other SMS message. The message may include a generic text string, such as "You
20 have received a status enquiry". In this way the destination MS, which does not recognise status enquiries, will treat it as a normal SMS text message, for which it will return a delivery report.

25 On receipt of the response, the originating MS preferably displays to the originating user a message stating that a response to the status enquiry had been received. In this manner, the user of the originating MS knows that the destination MS is contactable. It is within the
30 contemplation of the invention that the originating MS may automatically display the message, or alternatively

may simply inform the user that there is a message waiting to be read, and store the message for the user to read later.

- 5 If the destination MS is uncontactable, preferably a message from a network operator will be returned to the originating MS. The message informs the user of the originating MS that the destination MS is uncontactable.
- 10 It is also within the contemplation of the invention that the network operator may retain a copy of the status enquiry message. In this manner, when the destination MS subsequently becomes contactable, the status enquiry message can be transmitted to the destination MS and a
- 15 response message returned to the originating MS. Thus, the user of the originating MS will know when the destination MS becomes available.

- It is further envisaged that such status enquiry messages
- 20 may be stored within any suitable element of the communication system's infrastructure, such as a base transceiver station (BTS) (or Node B in UMTS parlance), a base station controller (BSC) (or RNC in UMTS parlance), a mobile switching centre (MSC) or an operations and
- 25 management centre (OMC).

- A further embodiment of the present invention includes tagging entries in the phone book feature or call register feature of the originating MS. For those
- 30 entries that are tagged, the MS may automatically transmit status enquiries either at specific times of the

day, or periodically, such that the user of the MS can be kept informed as to the availability of the MSs corresponding to those entries tagged within the phone book feature or call register feature of the originating
5 MS.

Alternatively, the user of the originating MS may need to phone a specific number at a certain time and/or day. The user may be able to set a reminder on the MS such
10 that when it is time for the user to phone the specific number, the MS automatically reminds the user that they need to make the phone call. Such a reminder occurs whilst also the MS automatically transmits a status enquiry message to the desired destination MS to
15 determine if the number they are required to call is contactable.

The preferred embodiment of the present invention is described with respect to a mobile server comprising a
20 radio frequency interface to a wireless communication system, operably coupled to a user-specific memory module such as a SIM. However, it is within the contemplation of the invention that other wireless communication units, such as a cellular phone, personal digital assistant
25 (PDA), portable radio, laptop computer, pager, etc. could benefit from the inventive concepts hereinbefore described.

It will be understood that the status enquiry means and method described above provides at least some of the following advantages:

- 5 (i) Provides the ability to determine the status of another mobile server (MS)/subscriber unit without the need to make a full call set-up to that MS/subscriber unit.
- 10 (ii) If the user has not configured their MS to receive delivery reports for SMS text messages, it is not necessary for them to change the configuration of their MS in order to ascertain whether the destination MS is
15 contactable.
- 20 (iii) Even if a network operator does not permit delivery reports for SMS text messages, it is likely that they will permit the sending and responding to of status enquiries, as these will generate further revenue.
- 25 (iv) A user of a MS may initiate a status enquiry with the only input required being the phone number of the destination MS, or the location of the phone number of the destination MS within a phone book feature or call register feature of the MS.

(v) The destination MS automatically responds without user input, and possibly without the need for the user to be informed.

5 (vi) Certain embodiments of the present invention provide the advantage that a user of a destination MS can configure its status message handling in advance. Subsequently, whenever a
10 MS, the configured information is automatically included in the response by the MS.

(vii) Other embodiments of the present invention provide for an originating MS to
15 transmit status enquiries at predetermined times, for example when the user has arranged to call the user of the destination MS. This allows the user to automatically ascertain whether the destination MS is available before initiating a
20 full call set-up.

Whilst the specific and preferred implementations of the embodiments of the present invention are described above, it is clear that variations and modifications of such
25 inventive concepts could be readily applied by one skilled in the art.

Thus, a status enquiry means and method have been described wherein the aforementioned disadvantages
30 associated with prior art means and methods have been substantially alleviated.

Claims

1. A method of status enquiry between a plurality of subscriber communication units in a wireless communication system, the method comprising the steps of:
5 transmitting a status enquiry from a first subscriber communication unit to a second subscriber communication unit;
receiving said status enquiry at said second
10 subscriber communication unit; and
transmitting a status response message back to said first subscriber communication unit in response to said status enquiry.
- 15 2. The method of status enquiry according to Claim 1, wherein the step of transmitting a status response message is performed either automatically or in response to a second subscriber communication user input.
- 20 3. The method of status enquiry according to Claim 1 or Claim 2, the method further comprising the step of:
displaying at said first subscriber communication unit, upon receipt of the status response message, a status indication of said second subscriber communication
25 unit.
4. The method of status enquiry according to any preceding Claim, the method further comprising the step of:
30 displaying at said second subscriber communication unit, upon receipt of said status enquiry

message, an indication that a status enquiry message has been received.

5. The method of status enquiry according to any of
5 the preceding Claims, the method further comprising the steps of:

transmitting said status enquiry message from
said first subscriber communication unit via
infrastructure in said wireless communication system to
10 said second subscriber communication unit; and/or

transmitting said status response message from
said second subscriber communication unit via
infrastructure in said wireless communication system to
said first subscriber communication unit.

15

6. The method of status enquiry according to any of
the preceding Claims, the method further comprising the
step of:

providing a user of said second subscriber
20 communication unit with an ability to input status
information to be included in a response to a status
enquiry message.

7. The method of status enquiry according to any of
25 the preceding Claims, wherein said status enquiry message
is transmitted in the form of a short message service
message.

8. The method of status enquiry according to Claim
30 7, the method further comprising the step of:

identifying said status enquiry message as being a status enquiry in a header portion of said short message service message.

5 9. The method of status enquiry according to any of the preceding Claims, the method further comprising the step of:

making a number of features of said status enquiry message or said status response message user-
10 configurable.

10. The method of status enquiry according to Claim 9, wherein said user-configurable features include at least one of:

15 (i) an ability to transmit or receive status enquiry calls at a particular time of a day, or a particular day in a week,

(ii) whether a status enquiry message and/or a status enquiry response should be displayed to a user,

20 (iii) whether a subscriber communication unit is accepting calls,

(iv) whether a subscriber communication unit is accepting priority calls,

25 (v) when a subscriber communication unit will start accepting calls,

(vi) whether a subscriber communication unit is arranged to play, for example, a ring tone on receiving a call, or

30 (vii) whether a subscriber communication unit is muted.

11. The method of status enquiry according to any of the preceding Claims, the method further comprising the step of:

5 storing said status enquiry message and/or said status response message in either an element in the infrastructure of said wireless communication system for subsequent re-transmittal to a requesting or destination subscriber unit or in said first or second subscriber communication unit for subsequent retrieval by a user.

10

12. The method of status enquiry according to any of the preceding Claims, the method further comprising the step of:

15 tagging at least one phonebook entry or call register relating to said status enquiry message such that it can be transmitted at a time of a day, or periodically, to allow a user to be kept informed as to the availability of at least one other subscriber communication unit.

20

13. A wireless communication system adapted to facilitate the status enquiry method steps of any of Claims 1 to 12.

25 14. A subscriber communication unit adapted to perform any of the method steps of any of Claims 1 to 12.

15. A subscriber communication unit comprising:
 a controller for controlling transmission or
reception of a status enquiry message or a status
response message; and
5 a transmitter circuit, operably coupled to said
controller, transmitting a status enquiry message or a
status response message to another wireless remote
communication unit.
- 10 16. A subscriber communication unit, preferably a
subscriber unit according to Claim 15, the subscriber
communication unit further comprising:
 a controller for controlling transmission or
reception of a status enquiry message or a status
15 response message; and
 a receiver circuit, operably coupled to said
controller, receiving said status enquiry message or a
status response message from another wireless remote
communication unit.
- 20 17. The subscriber communication unit according to
Claim 15 or Claim 16, the subscriber communication unit
further comprising:
 a memory device storing status information
25 relating to at least one other subscriber communication
unit.
18. The subscriber communication unit according to
Claim 17, wherein the memory device stores a phone book
30 feature or call register feature related to said or at

least one other subscriber communication unit that a user of said subscriber communication unit may access.

19. The subscriber communication unit according to
5 Claim 17 or Claim 18, wherein the memory device stores a list of options in a menu accessible from said memory device, wherein said list of options includes a status enquiry option to initiate said status enquiry message.

10 20. The subscriber communication unit according to any of preceding Claims 14 to 19, wherein the subscriber communication unit is one of: a cellular phone, a portable or mobile radio, a personal digital assistant or a laptop computer.

15

21. A storage medium storing processor-implementable instructions for controlling a processor to carry out the method of any of Claims 1 to 12.

20 22. A subscriber communication unit substantially as hereinbefore described with reference to, and/or as illustrated by, FIG. 1 of the accompanying drawings.

25 23. A status enquiry method substantially as hereinbefore described with reference to, and/or as illustrated by, FIG. 2 of the accompanying drawings.

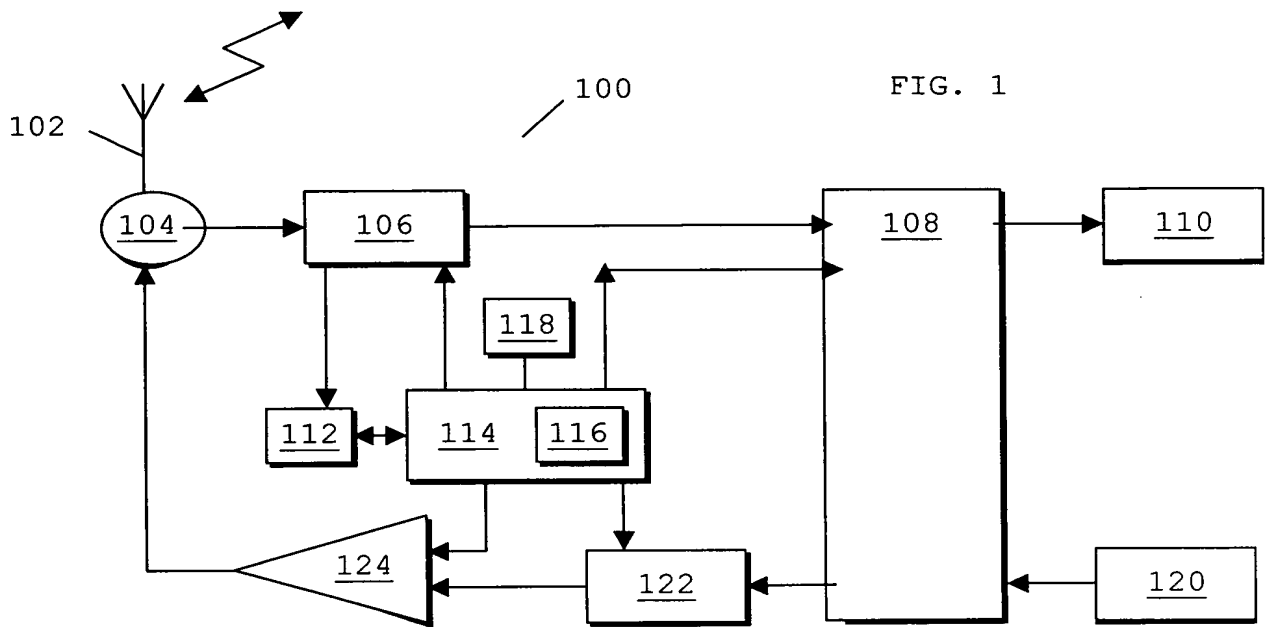
STATUS ENQUIRY IN A WIRELESS COMMUNICATION SYSTEM

Abstract

5 A method of status enquiry between a plurality of
subscriber communication units in a wireless
communication system includes the step of transmitting
(220) a status enquiry message from a first subscriber
communication unit (100) to a second subscriber
10 communication unit. The second subscriber communication
unit receives said status enquiry message; and transmits
(240) a status response message back to said first
subscriber communication unit in response to said status
enquiry message.

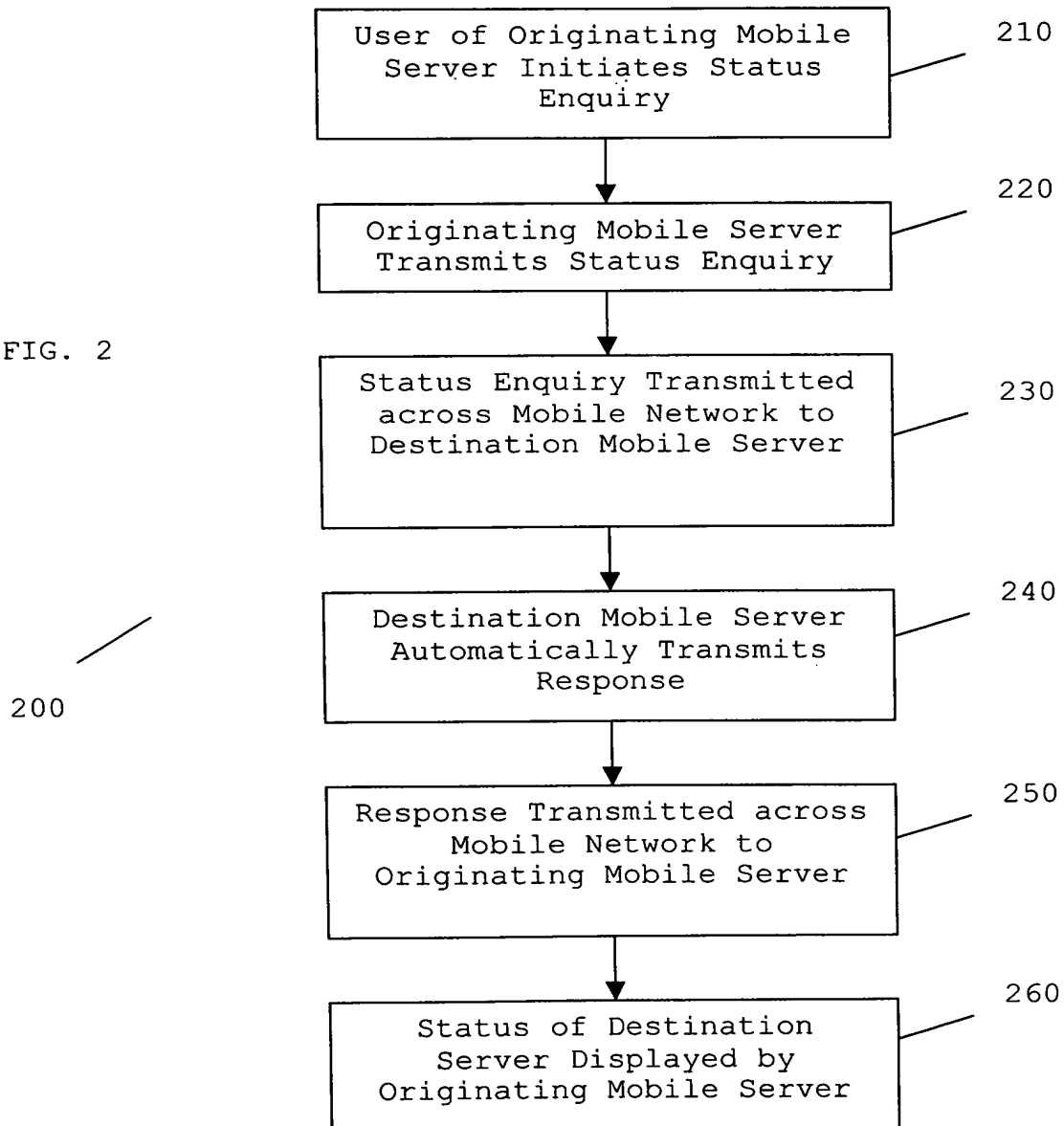
15 This provides an ability to a subscriber unit to
determine the status of another subscriber unit without
the need to initiate a full call set-up to that
subscriber unit. This allows the user to automatically
20 ascertain whether the destination subscriber unit is
available before making the call. The destination
subscriber unit may automatically respond without user
input, and preferably without the need for the user to be
informed.

25 {FIG. 2 to accompany abstract}



This Page Blank (usptc)

FIG. 2



mis Page Blank (uspto,